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EXAMINER

NORTON, JENNIFER L

ART UNIT PAPER NUMBER

2121

DATE MAILED: 09/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/766,003

Applicant(s)

MOSS, ANDREW J.

Examiner

Jennifer L. Norton

Art Unit

2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-11 and 13-16 is/are rejected.
- 7) ☒ Claim(s) 6 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-16 are pending.

Drawings

2. The drawings are objected to because Figure 7 is omitted. Drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, 5, 7, 9, 11, 13, 14, 15 and 16 are rejected under 35 U.S.C 102 (b) as being anticipated by U.S. Patent No.: 5,197,280 (referred to as Carpenter hereinafter).

5. As per claim 1, Carpenter discloses a control system (Fig. 3, element 300) for supplying a control signal (col. 5, lines 49-56) to a controlled apparatus (Fig. 3, element 346), the system comprising: an error generation means (Fig. 3, element 322) operable to produce an error signal (col. 5, lines 29-32) from a feedback value (col. 5, lines 21-26 and Fig. 3, element 324) relating to a measured operating parameter (col. 5, lines 21-26) of a controlled apparatus 346 and a required value (col. 5, lines 26-28 and Fig. 3, element 320) relating to a desired operating parameter value (col. 5, lines 26-28) of the controlled apparatus 346; and a controller (col. 5, lines 35-39 and Fig. 3, element 332) operable to receive the error signal and a gain signal, and to output a control signal in dependence upon the values thereof, wherein a gain selection means (Fig. 3, element 330) is provided, which gain selection means is operable to receive the error signal and to output a gain signal to the controller 332 in dependence upon the value of the error signal (col. 5, lines 32-35 and Fig. 3, elements 320, 322, 324, and 330) .

6. As per claim 3, Carpenter discloses a system as set forth in claim 1, wherein the error signal equals the difference between the required value 320 and the feedback value 324 (col. 5, lines 29-32).

7. As per claim 5, Carpenter discloses a system as set forth in claim 1, wherein a disturbance compensation means (Fig. 3, element 334 and 336) is provided which is operable to receive an input value relating to at least one other parameter value (col. 5, lines 39-43) of the controlled apparatus 346, and to receive the error signal 322, and to produce a compensated error signal (Fig. 3, element 340) in dependence upon the input value 336 and the error signal 322, and to supply the compensated error signal 340 to the filter means (col. 5, lines 49-57 and Fig. 3, element 342) or the gain selection means in place of the error signal 322.

8. As per claim 7, Carpenter discloses a method for controlling a controlled apparatus (Fig. 3, element 346) having a measured operating parameter (col. 5, lines 21-26), the method comprising: generating an error signal (col. 5, lines 29-32) from a feedback value (Fig. 3, element 324) relating to a measured operating parameter value of a controlled apparatus 346, and a required value (Fig. 3, element 320) relating to a desired value of the operating parameter (col. 5, lines 26-28) of the controlled apparatus 346; and generating a control signal (Fig. 3, element 332) in dependence upon the error signal (Fig. 3, element 322) and a received gain signal (Fig. 3, element 330, wherein the

gain signal 322 is selected in dependence upon the error signal 322 (col. 5, lines 32-35).

9. As per claim 9, Carpenter discloses a method as set forth in claim 7, wherein the error signal equals the difference between the required value 320 and the feedback value 324 (col. 5, lines 29-32).

10. As per claim 11, Carpenter discloses a method as set forth in claim 7, wherein a compensated error signal (Fig. 3, element 340) is produced using a disturbance compensation means (Fig. 3, element 334 and 336) which is operable to receive an input value relating to at least one other parameter value (col. 5, lines 39-43) of the controlled apparatus 346, and to receive the error signal 322, and to produce the compensated error signal 340 in dependence upon the input value and the error signal 322, the compensated error signal 340 being supplied in place of the error signal 322 (col. 5, lines 49-57).

11. As per claim 13, Carpenter discloses a gas turbine engine controller (col. 5, lines 35-39 and 49-57, and Fig. 3, elements 332 and 342) including a control system (Fig. 3, element 300) as set forth in claim 1.

12. As per claim 14, Carpenter discloses a controller as set forth in claim 13, wherein the measured operating parameter is temperature (col. 5, lines 21-28).

13. As per claim 15, Carpenter discloses a method of controlling a gas turbine engine including a method as set forth in claim 7 (col. 1, lines 62-66).

14. As per claim 16, Carpenter discloses a method as set forth in claim 15, wherein the measured operating parameter is temperature (col. 5, lines 21-28).

15. Claims 6 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over Carpenter in further view of U.S. Patent No.: 6,389, 816 (referred to as McCarty hereinafter).

18. As per claim 2, Carpenter does not expressly teach a system as set forth in claim 1, wherein the controller is operable to output a signal equivalent to the error signal multiplied by the gain signal.

McCarty teaches a gain (Fig. 3, element 124) multiplies the error signal by the value of $1/K$ where K is initially set at a predetermined value (col. 3, lines 55-58).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to modify the teaching of Carpenter to include a system as set forth in claim 1, wherein the controller is operable to output a signal equivalent to the error signal multiplied by the gain signal for the purpose of adjusting the gain of the error signal to be equal to the desired change in the controlled engine parameter (Carpenter: col. 1-2, lines 66-68 and 1-3).

19. As per claim 8, Carpenter does not expressly teach a method as set forth in claim 7, wherein the control signal is equivalent to the error signal multiplied by the gain signal.

McCarty teaches a gain (Fig. 3, element 124) multiplies the error signal by the value of $1/K$ where K is initially set at a predetermined value (col. 3, lines 55-58).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to modify the teaching of Carpenter to include a system as set forth in claim 7, wherein the control signal is equivalent to the error signal multiplied by the gain signal (Carpenter: col. 1-2, lines 66-68 and 1-3).

20. Claim 4 rejected under 35 U.S.C. 103(a) as being unpatentable over Carpenter in further view of U.K. Patent No.: 1,135,508 (referred to as hereinafter IBM (International Business Machines)).

21. As per claim 4, Carpenter does not expressly teach a system as set forth in claim 1, wherein a filter means is provided which is operable to filter the error signal and to supply a filtered error signal to the gain selection means in place of the error signal.

IBM teaches to a connection between a high pass filter (Fig. 1, element 23) and the output of the summing device (Fig. 1, element 9), and the high pass filter output to the amplifier to produce a gain (pg. 4, lines 9-12).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to modify the teaching of Carpenter to include a filter means that is operable to filter the error signal and to supply a filtered error signal to the gain selection means in place of the error signal for the purpose of modifying the abrupt nature of change in the position of a set point to allow the system to respond to the set point change more gradually (pg. 2, lines 12-20).

22. As per claim 10, Carpenter does not expressly teach a method as set forth in claim 7, wherein the error signal is filtered and a filtered error signal is used to select the gain signal in place of the error signal.

IBM teaches to a connection between a high pass filter (Fig. 1, element 23) and the output of the summing device (Fig. 1, element 9), and the high pass filter output to the amplifier to produce a gain (pg. 4, lines 9-12).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to modify the teaching of Carpenter to include a filter means that is operable to filter the error signal and to supply a filtered error signal to the gain selection means in place of the error signal for the purpose of modifying the abrupt nature of change in the position of a set point to allow the system to respond to the set point change more gradually (pg. 2, lines 12-20).

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following reference is cited to further show the state of the art with respect to a control system in which an error generate signal and gain value are used to control an apparatus:

U.S. Patent No.: 6, 619, 261 discloses a system for controlling an engine control mechanism in a manner that limits the engine operating condition to within a desired operating range.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer L. Norton whose telephone number is 571-272-3694. The examiner can normally be reached on 8:00 a.m - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on 571-272-3687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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